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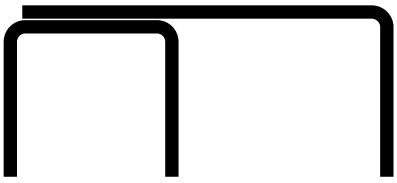
Mobile Cooking Space Cart: Enabling Community with Communal Cooking Spaces

Thomas Nasca



Mobile Cooking Space Cart

Enabling Community with Communal Cooking Spaces

By
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A Thesis submitted to the faculty of the School of Design
And the College of Imaging Arts and Sciences
For the degree of Master of Fine Arts in Industrial Design

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Abstract

The goal of this thesis is to enable the growth of small communities within apartment building spaces. This was accomplished by designing a common cooking space for apartment buildings.

My research proved that a shared cooking space would be beneficial to users for social and security reasons. I am aware that solitude is also important, which is why I designed a space that would not restrict users to a community area. As a result, I designed guidelines for an apartment with both private and public cooking spaces while encouraging users to use the latter through functional differences.

These include a furniture design solution that allows users to easily use either cooking space through the use of a mobile cart that provides storage space, table space and seating–providing them access to their common tools, ingredients and dining space regardless of where users decide to cook and eat. This furniture design allows the communal cooking space to function smoothly, enabling residents of apartment buildings to naturally form communities.

Introduction

When I leased my apartment in Rochester, the realtor told me it was a “community building.” It was in a great location, had beautiful Art Deco architecture, and was inexpensive. It was no community though. I recognized some familiar faces from trips to the parking lot, laundry room and mail boxes, but other than a nod to say ‘hello,’ there was no community in sight. We shared the same space, roughly, but little else.

About 8 months into my time living in that building, I woke up on a Saturday morning to find broken glass and blood in the hallways. There was blood on cars in the parking lot. Something happened. Maybe my neighbor knew?

1625 East Avenue - My home from 2009 through 2011. Fig. 1

Knock Knock

My neighbor across the hall didn't know what happened, but now we were both curious. We knocked on the next door. Then the next. Then the next. Each time we knocked, another member was added to our group. Soon, nearly half of the residents were congregated in the halls, learning about the woman who broke up with her drunk boyfriend the night before. He did not take it well.

My kitchen at 1625 East Avenue.

It took an emergency to bring people together in my apartment building. Before that, nobody knew anybody. From that day on, we were a community engaged by a shared experience. We knew each other. We looked out for each other. Some of us spent quality time together. Some of us still do 5 years later.

My dining area at 1625 East Avenue.

Problem Statement

Communities are built by people of shared interests, proximity, experiences and/or goals. They provide a sense of belonging and safety. In communities, everyone looks out for the safety and well being of the group. Communities interact, learn and are active together in social activities.

The archetypical apartment provides no reliable medium for engaging residents in shared experiences. The mailroom, the parking lot, the laundry room - all provide shallow experiences that don't encourage interaction.

How can apartment buildings encourage community formation?

Research

Communities and Public Housing

Original New York Times Caption: "The implosion of a large housing project in Newark in 1996. Many cities have moved toward smaller-scale housing that does not carry the stigma of despair and poverty." Fig. 2

The traditional city community–where children play on the sidewalks and business owners keep an eye out for suspicious activity–doesn't exist where public housing projects stand[1]. Urban planners intended the opposite of what resulted: They integrated playgrounds, community centers and common spaces in order to build a sustainable and affordable state-owned neighborhood. But most projects fell victim to inflated crime that drove poverty and instability. The public housing program of the United States didn't work very well.

1 Jacobs, *The Death and Life of Great American Cities*, 73, 101

These residential buildings lacked critical components of what makes a great community. While researching Boston's North End neighborhood in the late 1950's, Jane Jacobs found that a successful naturally forming city community is characterized by businesses that run at all hours of the day and community characters who make conversation with both friends and strangers. Children go to corner stores after school and play on the sidewalks as they are watched over by all members of the neighborhood. These hubs serve as micro-communities, wherein individuals may belong to several.[2]

I am writing this in a coffee shop in a small city in New York's Hudson Valley; everyone seems to know everyone (or at least acknowledge their existence). A regular was just asked to make his own coffee because the staff was busy with other customers. This coffee shop, Bank Sq. in Beacon, NY, was exploring the trust it held for its own micro-community. It was allowing it to watch over itself. Letting their customer make his own coffee was an example of Jane Jacobs' observations of communities building themselves.

Alex, employee of Bank Sq. in Beacon, NY, posing with Erik, daily customer.

2 Jacobs, *The Death and Life of Great American Cities*, 73

The failed public housing complexes lacked places to go, things to do–places for people to reliably congregate for a purpose. The parks and planted areas are nice to have, but they aren't necessary components of daily life and are generally unoccupied at night and while the children are at school[3]. These empty unused areas become havens for illegal and unwanted activity[4]. They are the reasons why people leave. Community killers. These seldom-used spaces lack the protection of communal self-surveillance and it shows: The New York City Housing Authority currently pays the NYPD ~$70,000,000 every year to guarantee patrol of the projects that haven't yet been demolished and replaced[5]. And they are being demolished. Since the 1990's, 121 public housing towers have been torn down in just Chicago, Philadelphia and Baltimore alone.[6]

While we failed and misunderstood what makes a healthy community through our planned housing projects, we now have a better understanding of building communities in dense city areas because of it. It's not simply grouping people together. Like the city streets where the community discovers itself, it happens where people have a need to be together in a common area. Corner stores, bars, delis, bakeries, coffee shops and more serve as community gathering places because there is a common need for those spaces.[7]

Common areas aren't common unless there's a common need. Identifying and utilizing a group's common need can lead to real community development. Leveraging that common need can provide a way for a community to form and grow trust through regular interaction.

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3 Jacobs, *The Death and Life of Great American Cities*, 77
4 Jacobs, *The Death and Life of Great American Cities*, 99, 123
5 Mireya, Goldstein, "Policing the Projects of New York City, at a Hefty Price"
6 Allain, "The Demolition of Public Housing in American Cities"
7 Jacobs, *The Death and Life of Great American Cities*, 73

Cooking and Consuming as Common Community Commodities

In the US, our cooking spaces have (almost) always been the focal points of our lives in both function and social interaction. The hearth of the 1700s and early 1800s was not only where cooking took place, but it was a source of heat for the whole home. Because of this, the hearth was usually centrally placed and held many of the household activities. Some families even slept by the hearth for warmth.[8] The phrase "The kitchen is the heart of the home" comes from this. The kitchen was the life force of these early American homes in many ways. In some homes, the cooking space was called the 'hall' instead of 'kitchen' because of its multi-purpose nature.[9] Today's home kitchens are often built with open floor plans and in central locations because of the social needs within the home– always accessible, always visible.

A 19th century American home on reenactment display at the Genesee Country Village and Museum in Mumford, NY

8 **Genesee Country Village and Museum: Historic Village Buildings tour.**

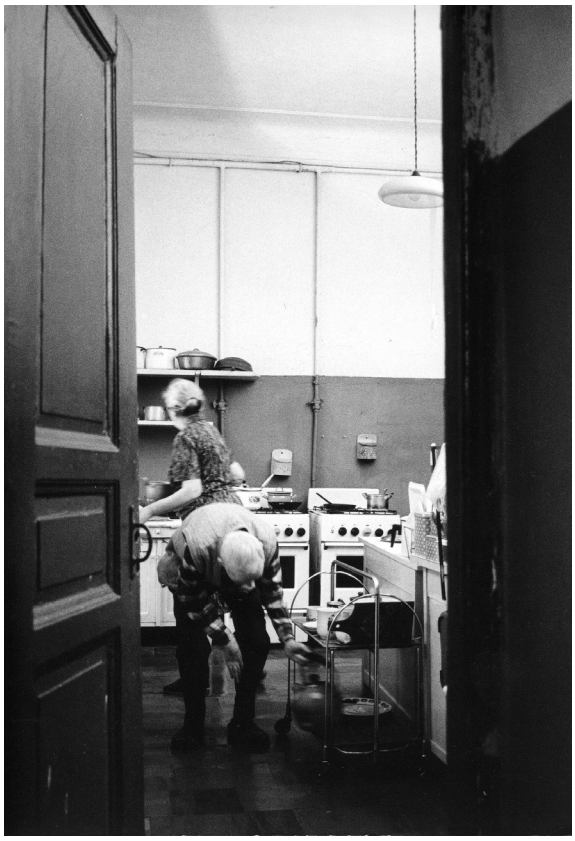
9 **Plante, The American Kitchen 1700 to the Present, 30**

The cooking space can be used to create a universally valuable and necessary space within an apartment building to enable community building. It can be the petri dish for the personal, social and communal developments necessary to start and maintain a micro-community. Cooking and eating are the common community commodities. They are necessary activities for all residents in an apartment building. There are precedents for this. I looked to the past and present to see how purposeful communal cooking spaces can lead to the development of strong micro-communities.

Precedents

USSR

The USSR forced communal living quarters on many of its residents in large cities like Moscow and St. Petersburg following the Russian Revolution. The apartments, called 'kommunalka,' were like studio apartments without bathrooms or kitchens–those were amenities to be shared with the floor or group of apartment units. These areas were the hubs of the apartment clusters and the kitchens naturally became the social centers where everyone interacted despite the great disparity in social groups.[10]



A communal coking space in a St. Petersburg apartment. Fig. 3

Like the projects in the US, these living quarters weren't successful overall. The family apartments were cramped and dimly lit, and the common areas experienced common petty theft and issues with drunkenness. The private apartments were usually one small room that accommodated sleeping, eating and spending time with your family. Despite being literally forced into these spaces with strangers and incredibly small "private" rooms by the government, the interactions with neighbors in the common areas created a micro-community. Neighbors knew each other's schedules and personalities. They became

10 Wikipedia, "Communal Apartment"

invested in their successes and failures through daily interactions and conversations. Shoving people of unlike backgrounds into this situation certainly caused a loss of privacy, but it also created a close trust within the micro-community.[11]

Unfortunately, the forces driving the creation of these living spaces were too flawed, and the project catastrophically failed. The USSR project failed because of the low quality of living spaces, the fact that the residents were forced into the living arrangement and the overall political state of the time. The government leveraged these living situations by encouraging residents to become police informants, eroding whatever trust was built within these communities.

A communal coking space in a St. Petersburg apartment. Fig. 4

Despite these core issues, ex-residents of the communal apartment spaces often look back on their time there with fondness. They learned to know their neighbors and shared both the good and the bad in their lives. They were never on their own. It's life enrichment through social involvement.

11 **Ilya, "Communal Living in Russia"**

Intentional Communities in the US

Shared cooking spaces exist in the US, usually in homes and apartments shared by a few family members or friends. University dormitories would seem to be the great common cooking space in the US, but they generally lack sufficient cooking spaces and force campus meal plans onto students, reducing the need for such spaces. Social interaction and community building in dormitories is achieved not through a necessary common task, but through activities and clubs that aren't essential to daily life in school. It's great for those who make the effort to be involved.

The kitchens in other commonly shared spaces (regular homes or apartments rented by multiple tenants) are just that - kitchens. They're not built for the task at hand. Of course they're designed with cooking in mind, but the spaces and the tools are rarely designed for sharing.

Elsewhere in the US, a small number of like-minded individuals and families are building 'intentional communities.'[12] These are clusters of people who chose to coexist for increased quality of social well being and to share in common environmental, social, moral, religious or professional goals. Sometimes they are simply large homes with large kitchens, others are purpose-built living spaces with separate commercial-style kitchens.

12 **Fellowship for the Intentional Community Website http://www.ic.org/**

Artist Residencies

I spoke with Katherine Burger, former Program Director for the Woodstock Byrdcliffe Guild's 'Artist in Residence' program for 18 years. The program gathers artists, offers them housing and a workspace for 4 weeks at a time with multiple sessions being offered during the summer. The cooking space at the Artists in Residence program is a communal one - shared among all of the invited artists to create and enjoy meals together. The artists' primary means of socializing is through cooking and eating in this space. Without it, they would otherwise keep to themselves in their studio spaces.

Still from the Woodstock Byrdcliffe Guild's short film about the Artist in Residency Program. Fig. 5

When I asked how important the communal cooking space was to the residency, she replied, "Being an artist is hard and lonely, working marginal jobs to get by. The privilege of sharing space and time with others is a gift." It is essential in this communal space that people have the option of solitude - the two large dining tables are supplemented by several small tables for quiet meals. Often though, residents eat together. When the residency ends and people leave, many cry because they're leaving the people with whom they bonded. They formed 'tribes'. It was even more meaningful for artists who didn't have families of their own.

This communal space is the core of the residency. Everyone gets the time to explore their own artwork during the day, but they then get to unwind, share and learn with the other artists over a hot meal.

Still from the Woodstock Byrdcliffe Guild's short film about the Artist in Residency Program. Fig. 6

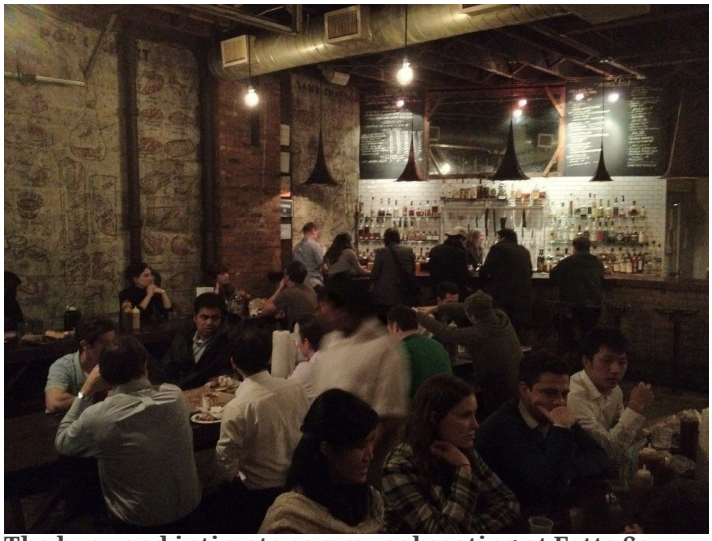
Real work has to be put into maintaining the balance of using a cooking space with many other people. Cleanliness is dealt with through the use of self-scheduling and everyone having a job to do. Sometimes people have cooking schedules and a few people make dinner for all of the resident artists as a group activity. If things get out of hand, management puts up humorous signs to remind residents of their duties, but that is the only occasional interruption of an otherwise self-governing system. The consequences of neglecting the cooking space cleanliness impact everyone involved and the repercussions help people remember to do their jobs and clean up.

As Artwork

In 1992, the artist Rirkrit Tiravanija showed his piece called Untitled (Free) in the 303 Gallery in New York City. The artwork was an experiential performance piece that sought to include the audience as the artwork itself. Part of the gallery was converted into a cooking space where he served rice and curry to the gallery attendees for free.[13]

The work is about eating and discussion. Enjoying food with friends, or sitting down in an empty chair at an otherwise occupied table and enjoying the company of strangers while you eat. The gallery attendees are both the work's audience and content, and turns the focus from art as object into art as experience.[14]

Similar experiences have found their way into the commercial space. Restaurants like Fette Sau in Williamsburg, Brooklyn utilize picnic benches for seating, demanding that restaurant goers sit alongside complete strangers. It encourages crossing paths to create a social experience.



The busy and intimate communal seating at Fette Sau.
Fig. 7

13 **Stokes, "Rirkrit Tiravanija: Cooking up an Art Experience"**
14 **Allen, "Curry Up!"**

Target Users

To limit the target user group to a tight definition would be a disservice to the users. Having to share a cooking space with a variety of ages, races, backgrounds, interests, and careers makes for a more interesting and dynamic living arrangement. It is safer to go the route of the home/college/artist residency and require target users to have a shared age, interest or experience to start, but we also have the successes of the USSR living arrangements and my own experiences with my Rochester apartment. I would rather allow for a greater dynamic range and restrict if needed than to start off restricted.

As Katherine Burger mentioned from her experience with the artist residency, users without children are more likely to find this shared cooking space experience valuable in their lives.

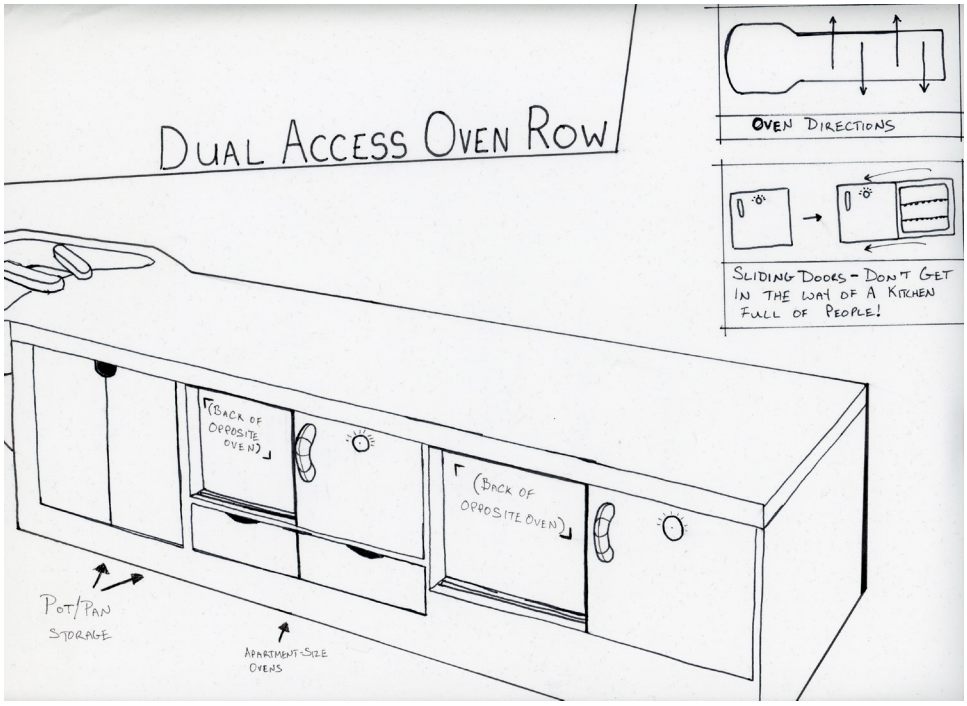
The target users are:

- Apartment dwellers in the US, typically in large cities.
- Apartment dwellers who have an interest in becoming part of a tight community, or enabling that kind of communal social growth with the people around them.
- Ages: 20 - 70.
- Mostly without children.
- Any variety of profession, background, career, race, political views, etc.
- Able bodied, for the time being.
- Those who live in units with typically one other person.

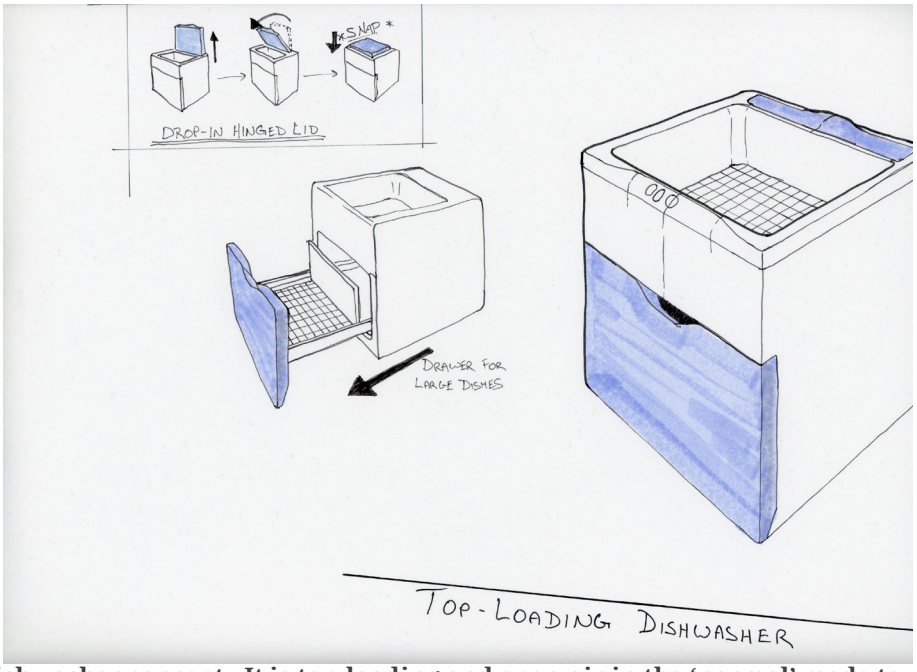
Initial Concepts

I sought to design a communal cooking space that serves 10-16 apartment units. Each floor of an apartment building would have one communal cooking space to share, and no individual cooking spaces within the apartment units. It cannot simply be a large kitchen–it has to function with the varying and fluid needs of a variety of people. The ability for the space to be shared is paramount for the success of the space.

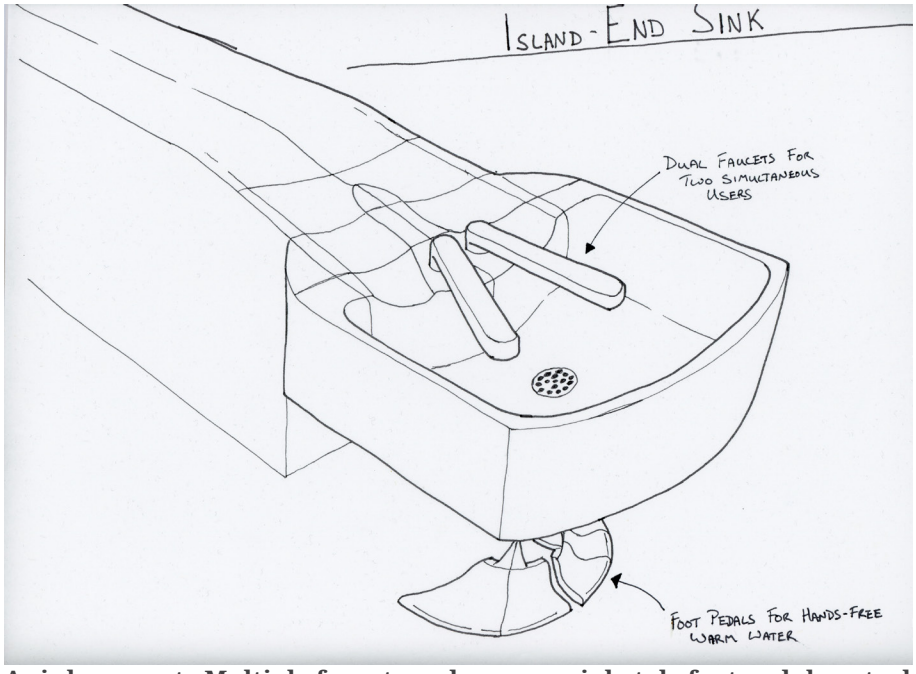
I quickly realized that the appliances, tools and storage solutions typically found in kitchens were not adequate for such a shared space. Most tools are strictly one user at a time. I explored solutions for many of these areas, developing concepts for dishwashers, refrigerators, sinks, ovens, stovetops, and cookware. All of the concepts embraced the flexibility needed for use with many users.

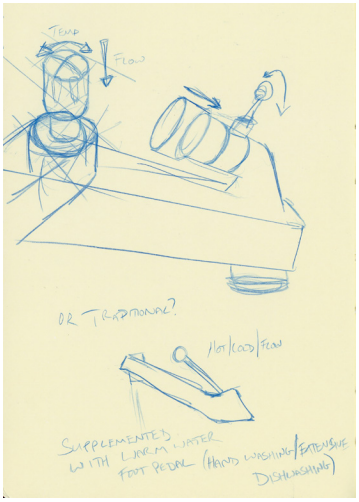


An oven orientation and sliding door design. It allows multiple users to use ovens simultaneously without doors getting in the way of the working space.

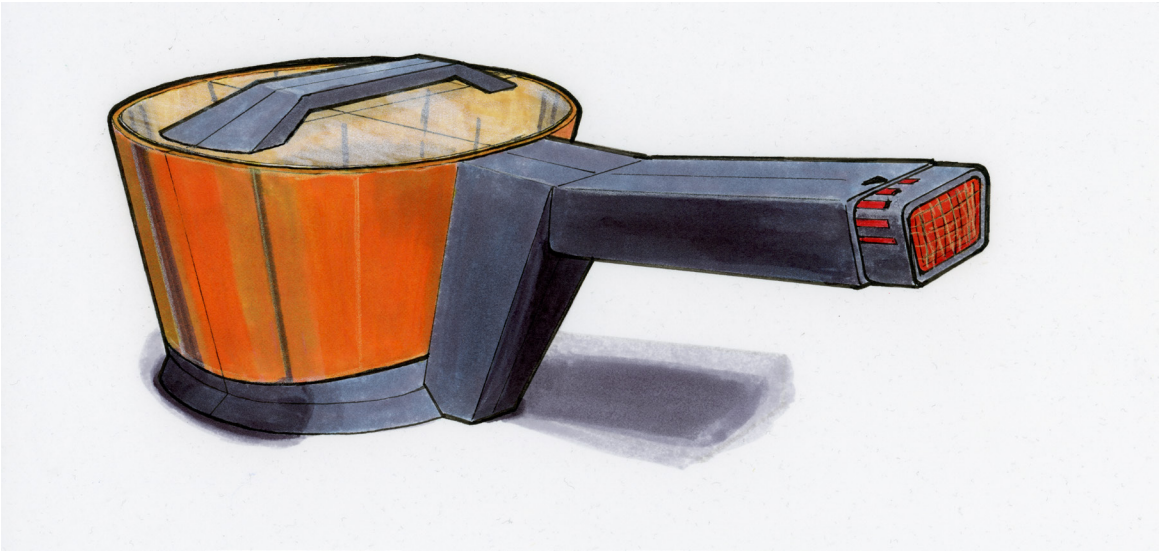


A dishwasher concept. It is top-loading and open-air in the 'normal' mode to allow users to emulate a common end-of-meal action–tossing used dishes in the sink. Sinks stay clutter-free and dishwashers are already loaded. Large items like pots, pans and large plates can be loaded in the slide-out bottom section. The top-lid pulls up from the back of the unit, and allows the dishwasher to begin the cleaning process.





A sink concept. Multiple faucets and commercial-style foot-pedal control for hands-free water savings. The countertop form allows easy cleaning and draining into the sink basin.



A wireless pot concept. A wireless power receiving coil is housed in the bottom of the pot, and converts electricity into heat through an electric resistance coil. The transmission coils would sit underneath the surface of the kitchen's countertop–transforming the countertop into the cooktop, allowing users to move their cookware to where they need to be. It creates a truly flexible shared cooking space. A temperature control dial and power indicator light are built into the handle.

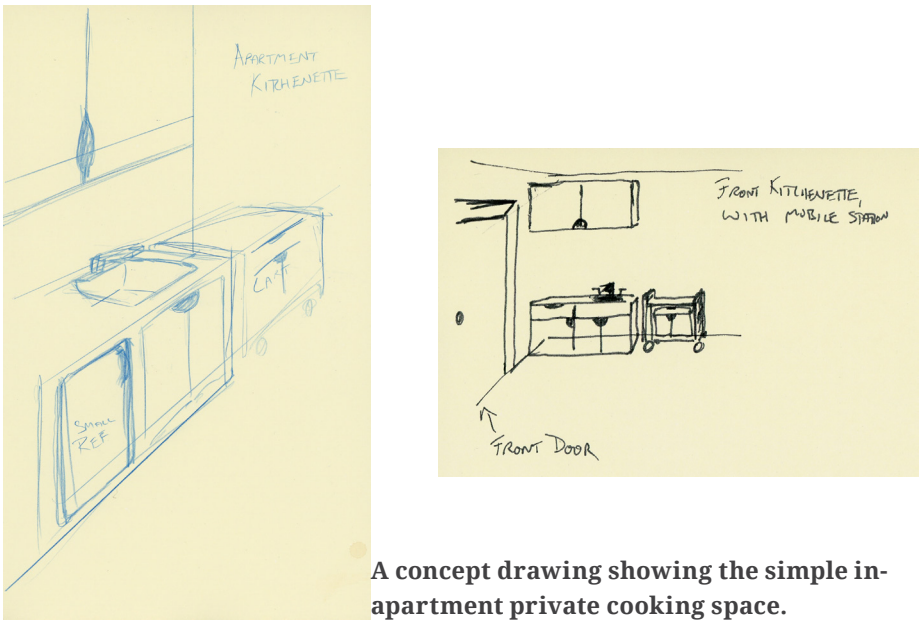
Fulton Innovations showcasing a working prototype of wireless cookware at CES 2011. Fig. 8

The Necessary Compromise

In talking with my peers and friends about the initial concepts, I was forced to rethink. The majority of opinions were favorable towards the individual concepts, but not of the broad goal of creating a communal space. The idea was noble, but asking users to give up their private cooking spaces is nearly impossible within the current culture of living spaces in the US. The kitchen still acts as the heart of the individual home.

I had to retain the ability of users to have a private meal after a tough day at work, or if they simply want some peace and quiet. I also had to empower the users to build their micro-communities within the apartment building, because it will enrich their lives.

I came upon a compromise: A basic cooking space within the apartment, and a full-featured communal cooking space in the common area.



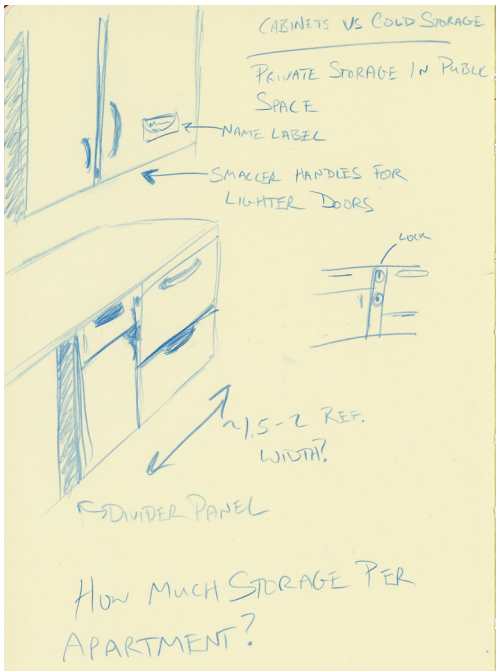
A concept drawing showing the simple in-apartment private cooking space.

The basic cooking space should contain:

- Storage for simple food items.
- Cold storage for perishables.
- A sink and faucet for washing and to get water.
- An outlet for various small appliances.
- A microwave or single-burner stovetop to make things hot.

The full-featured cooking space should have appliances and features that allow many users to operate within the space separately and simultaneously:

- Basic and cold storage for each apartment unit, with the ability to be locked for security.
- One or more sink and faucet with wide access to allow for multiple users at each sink station.
- At least one food preparation surface with double-sided access, so users can interact with each other across the surface while preparing food.
- Flexible stovetops. This can be either multiple stove tops, or a new technology that allows the stovetop to be flexible. For example, the wireless power coils that allow all food preparation surfaces to become power providers for wireless cookware.
- Storage for community cookware.
- Features or appliances designed for easy cleaning and drying of dishware and cookware belonging to multiple apartment units
- Open entrance or excellent visibility in, to allow the community to self-surveil.



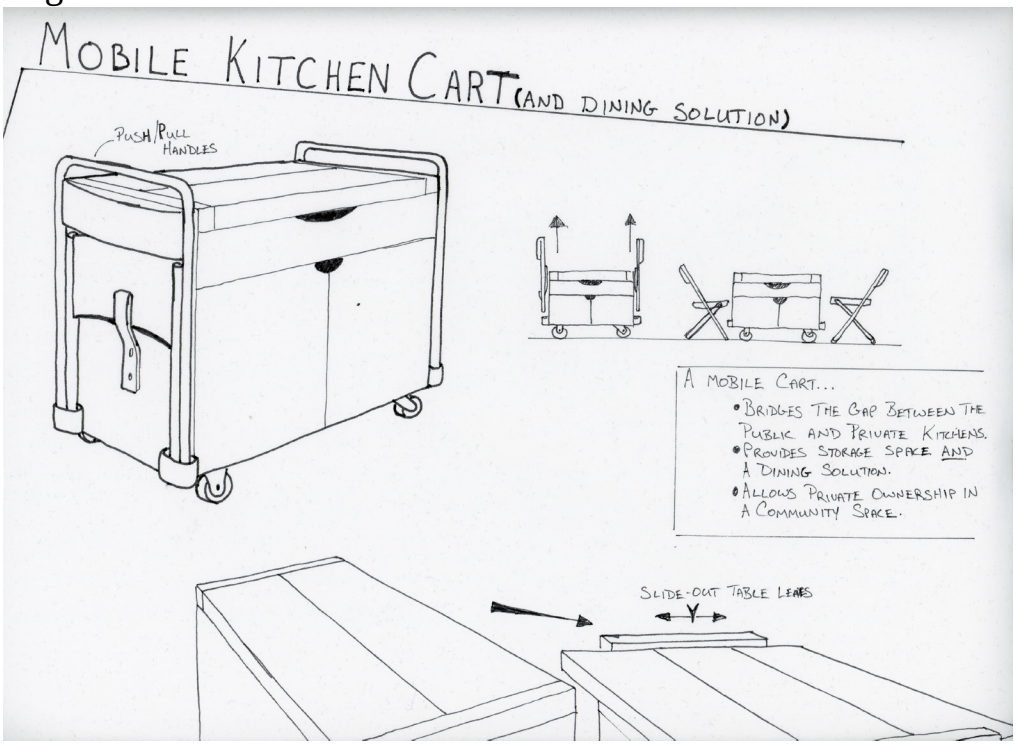
Concept drawing showing a segmented space available for each apartment unit in the common cooking space.

Creating two spaces creates a new problem though.

Between the Spaces

Users will have food ingredients, small appliances, cookware and dishware that will be needed regardless of which space they are cooking in. This design cannot require that they purchase all of these items in duplicate. Users will also need a place to eat the food that they prepare. Having two sets of furniture is wasteful, and it could reduce the comfort of those users when using common space furniture. What is that stain? Who didn't clean up the table?

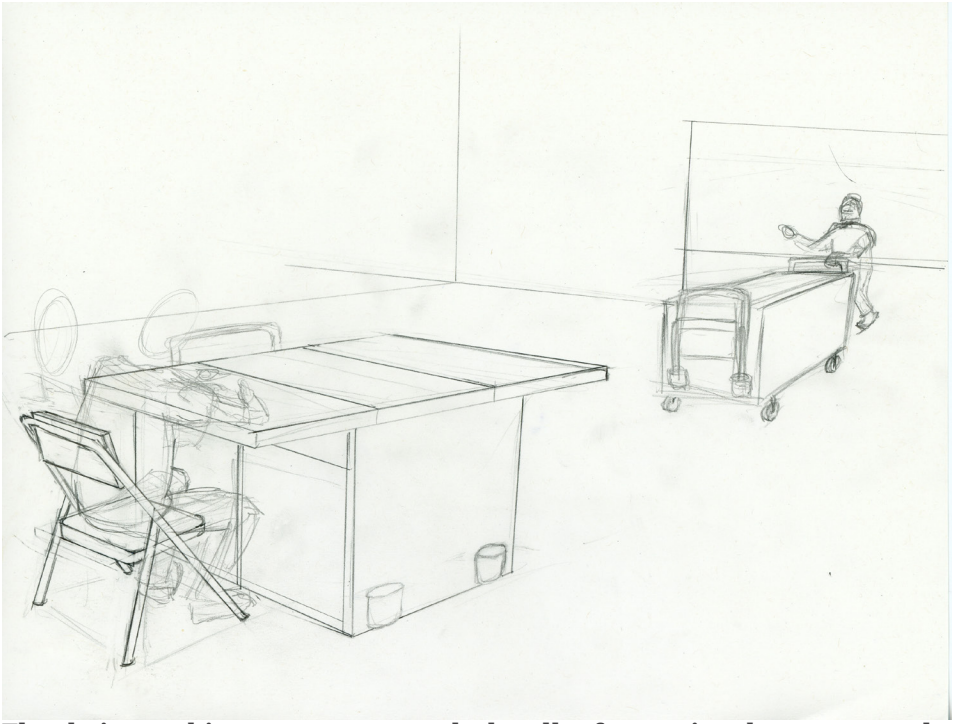
These issues can be resolved with a furniture design. A mobile furniture solution that provides users with storage, an eating surface and a place to eat will allow these two spaces to work together, making the communal cooking space more attractive to prospective users. This mobile furniture solution can be the enabler of community building through the shared common core activity of cooking.



Concepts

The concepts need to satisfy the functional requirements of compromise. They must provide:

- Storage space.
- Seating space.
- Seating that can be easily moved with the furniture unit.
- Large casters on all corners directional for mobility over a variety of surfaces and thresholds and through tight spaces (Apartment > Hallway > Common Cooking Space).
- A small overall footprint for mobility in tight spaces.
- Durable construction. This may be furniture that is provided with apartment rentals.

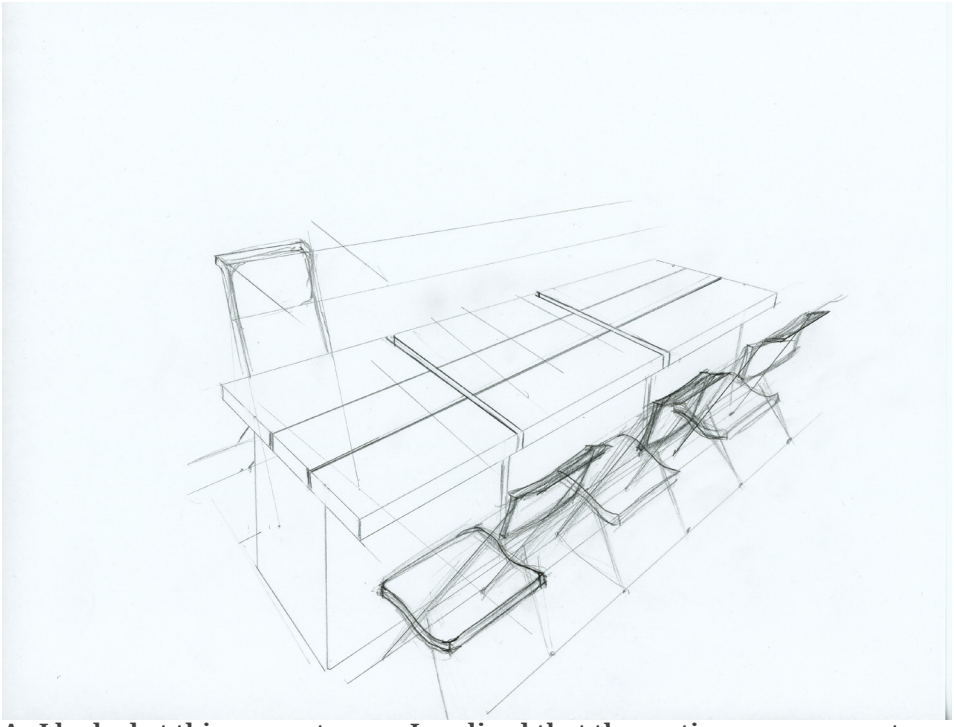


The chairs on this concept serve as the handles for moving the cart around.

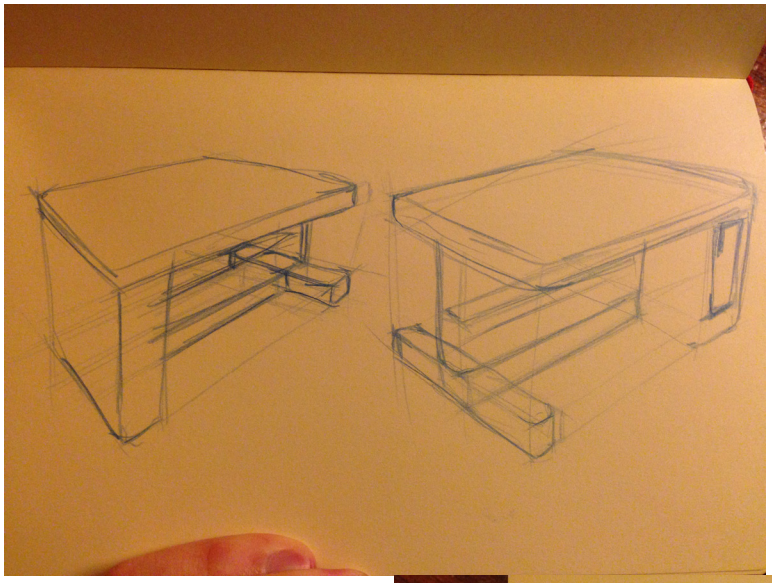
I created 3D models in SolidWorks for this concept to work out the mechanical details of the sliding table top leaves. I also used this to detail the seating. For this concept, I used existing folding chairs that were modified to create handles for moving the cart around. This simplified future construction of a full-scale mock-up.

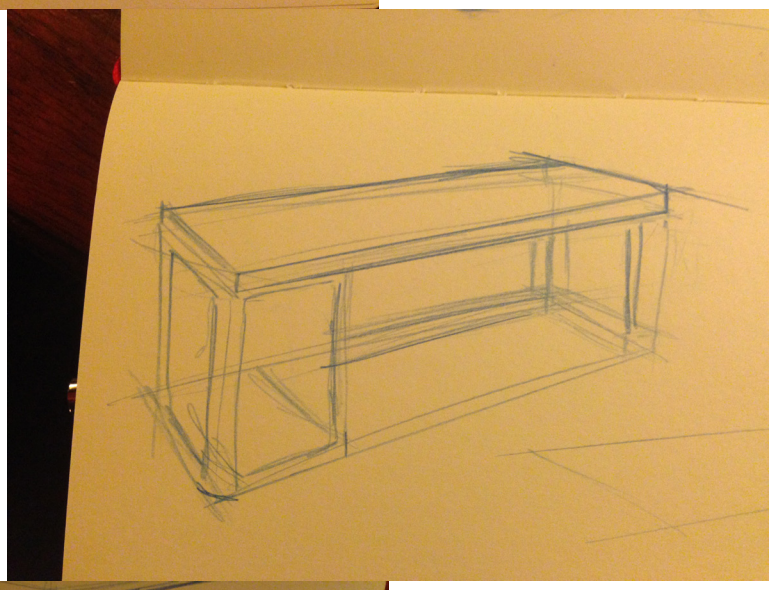
I began creating a full-scale model for this concept, starting with the seating. The seating is store-bought steel folding chairs modified to have a handle detail, so I fabricated some handles to weld onto the chairs.

This is the modified chair I made for this concept.

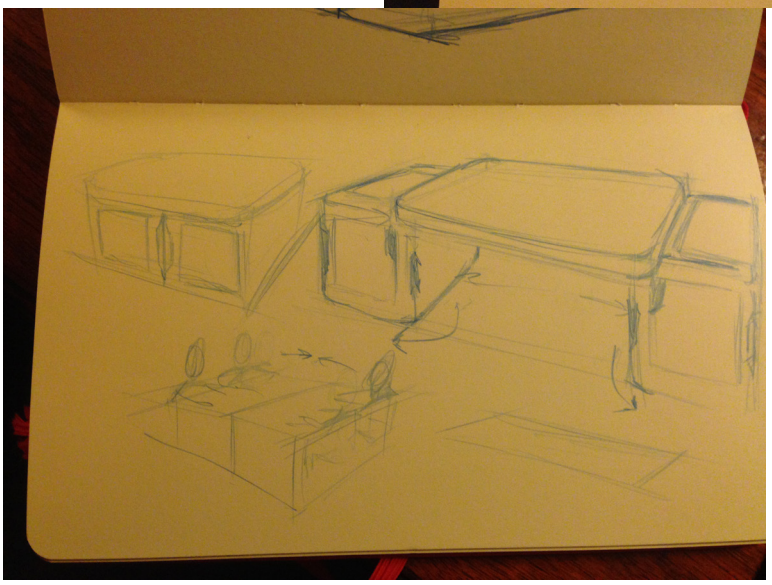


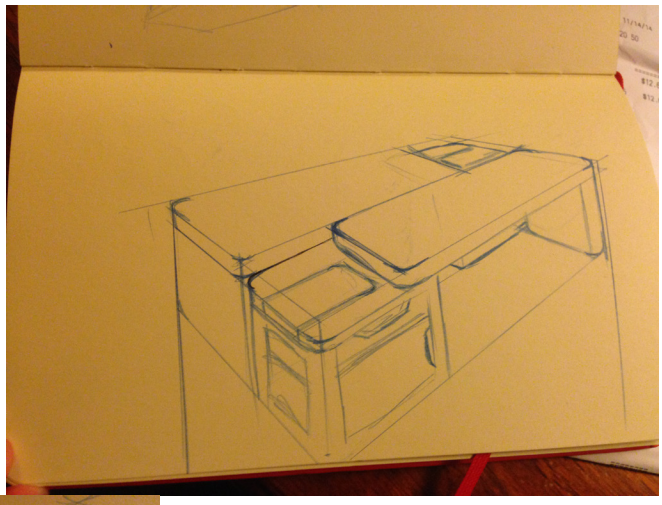
As I looked at this concept more, I realized that the seating arrangement possibilities were extremely limited. Placing multiple units together, as if you were eating a meal with a neighbor, can only result in a long table. This makes conversation with others difficult, especially at the far ends.

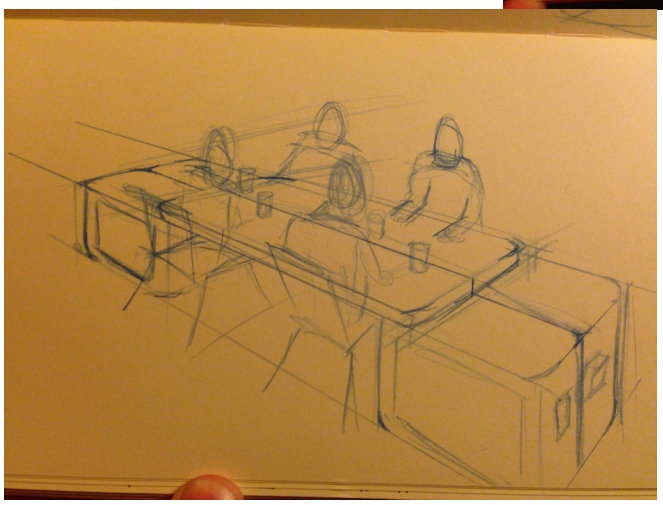




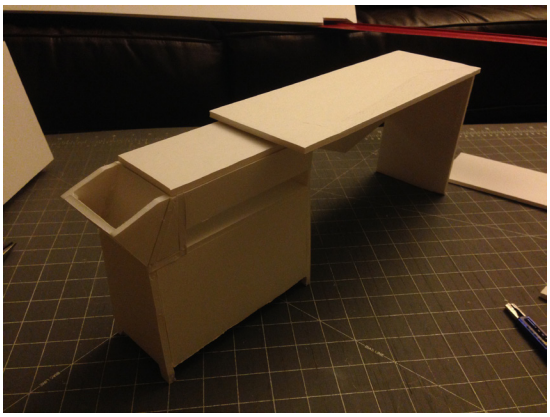
I sought to create an asymmetrical seating layout, to provide interesting and dynamic configurations when multiple units are placed together.

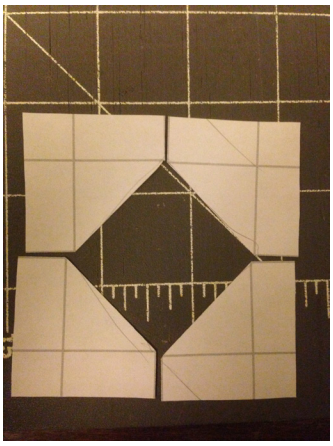


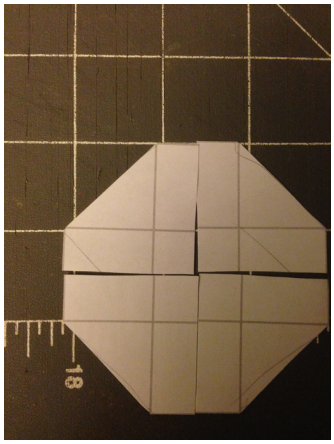


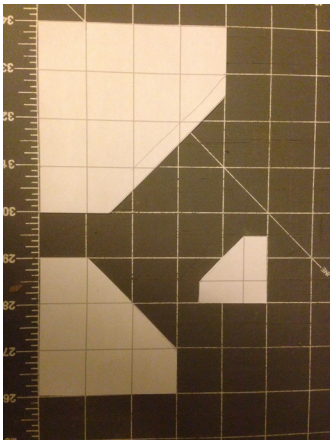


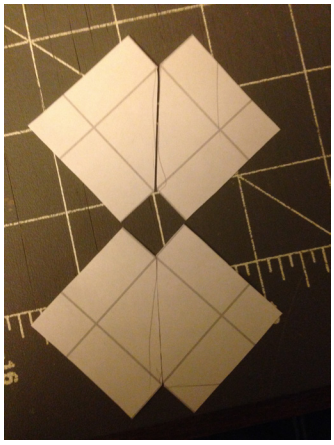
I liked this concept with two-abreast seating and a sliding table top. Providing seating for one while in a compact arrangement and seating for two when the table top is extended.

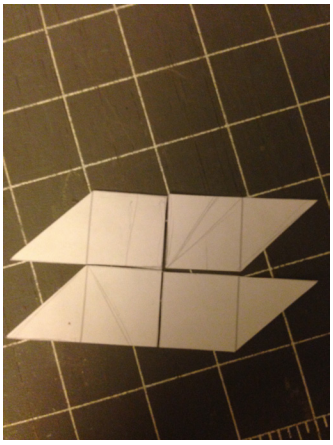




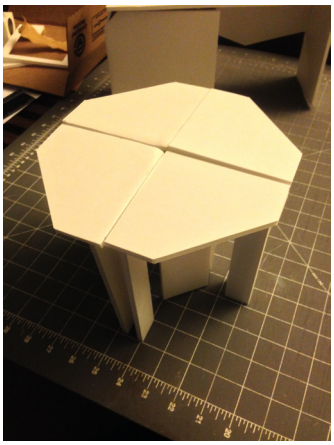


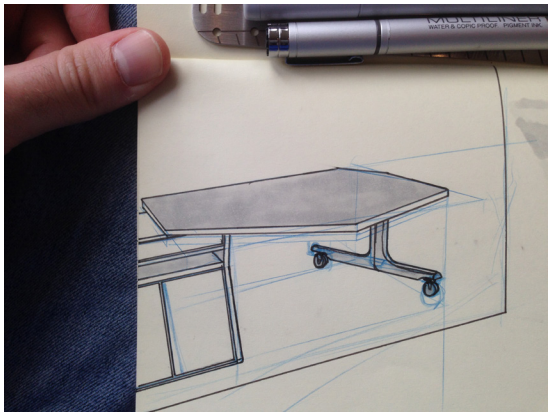


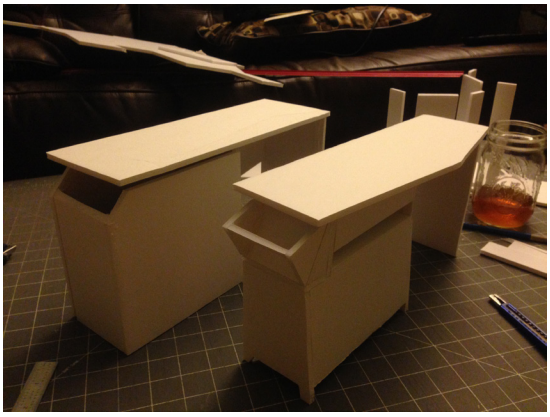




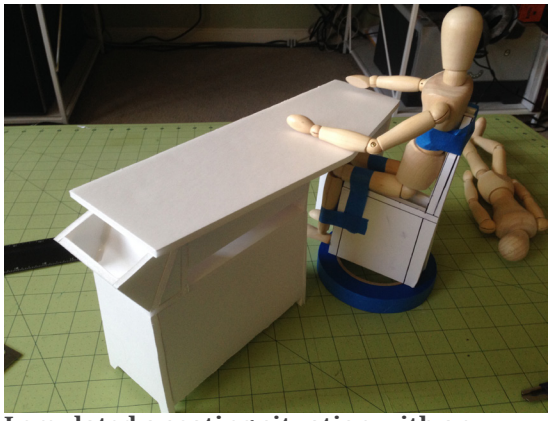
I experimented with other table top shapes for interesting arrangements and seating situations.





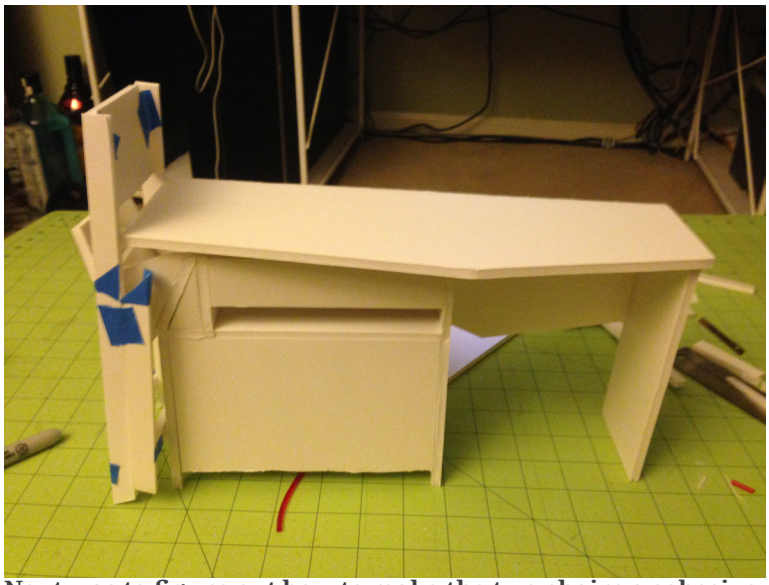


I didn't think any of the other shapes worked well with all of the goals I had for the furniture solution, but it gave me an idea to create an angled leading-edge for the table top. This could help provide more elbow-room in an intimate seating situation.



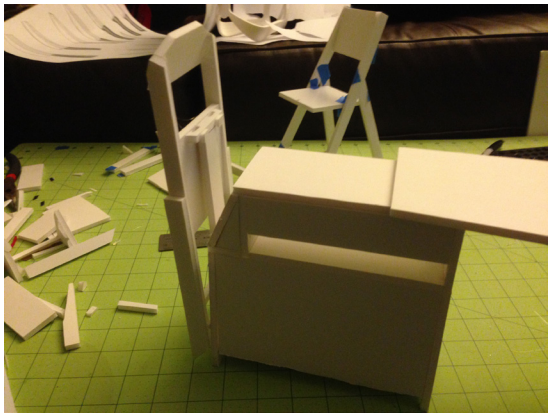
I emulated a seating situation with an artist's mannequin.

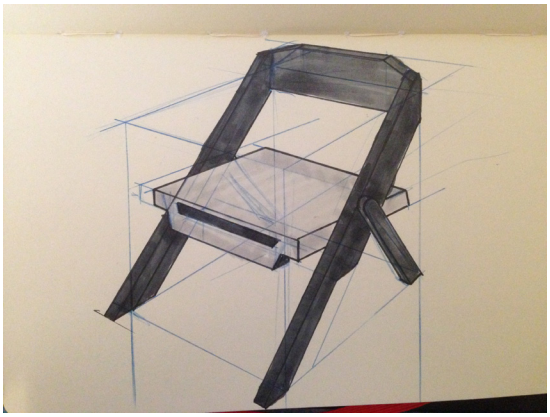
I made a full-scale mock-up of the mobile cart body to understand the overall dimensions. The final design needed to be narrower than this model. I also experimented with handle designs.

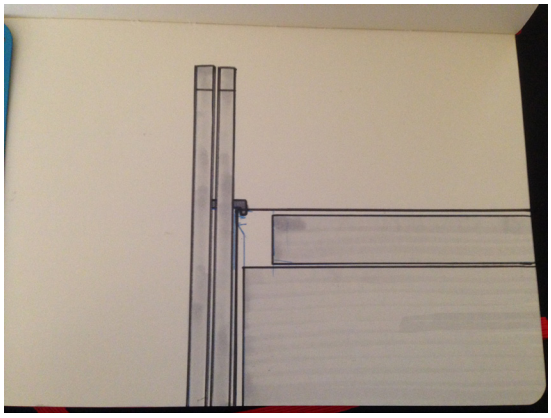


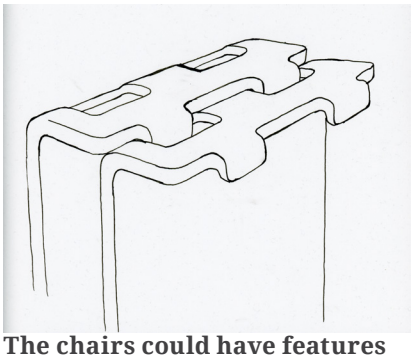
Next was to figure out how to make the two chairs a cohesive and attached design feature. The modified folding chairs were not cohesive.

I could attach the chairs like this, but they would be 'stuck-on', and not cohesive.

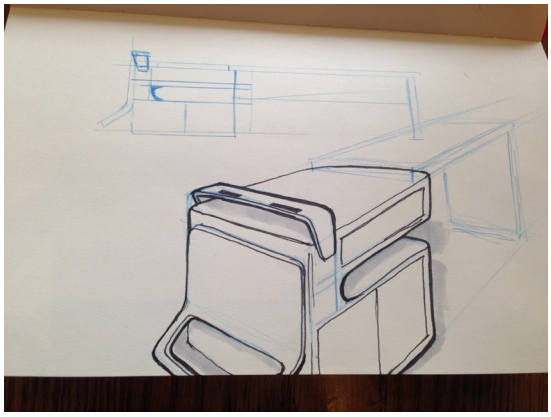


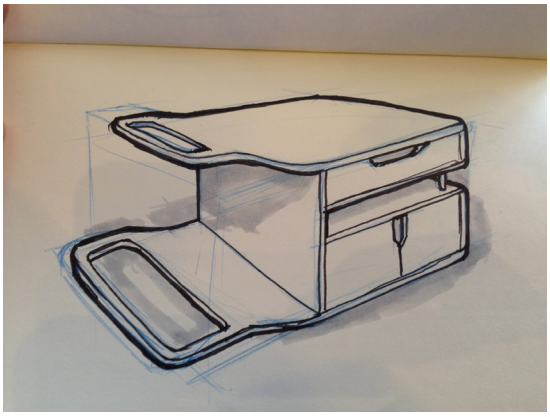


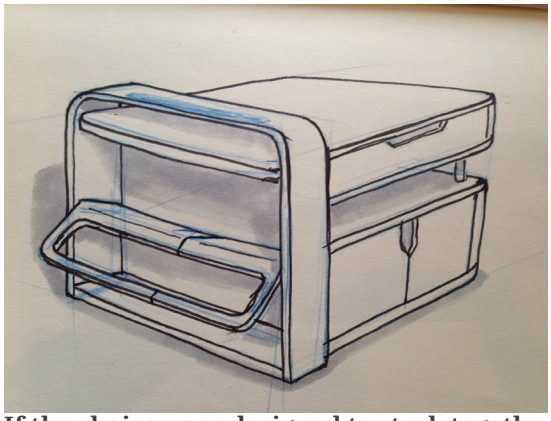


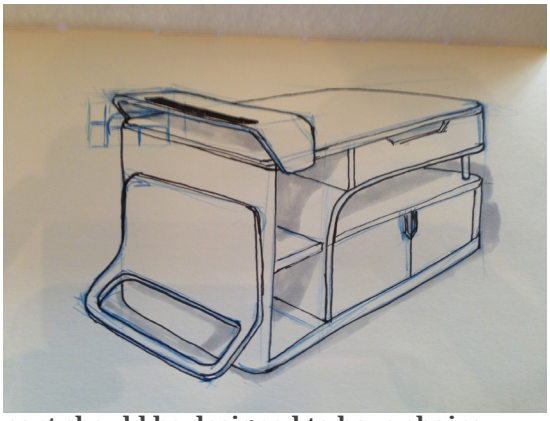


The chairs could have features built-in to allow for stacking within each other.



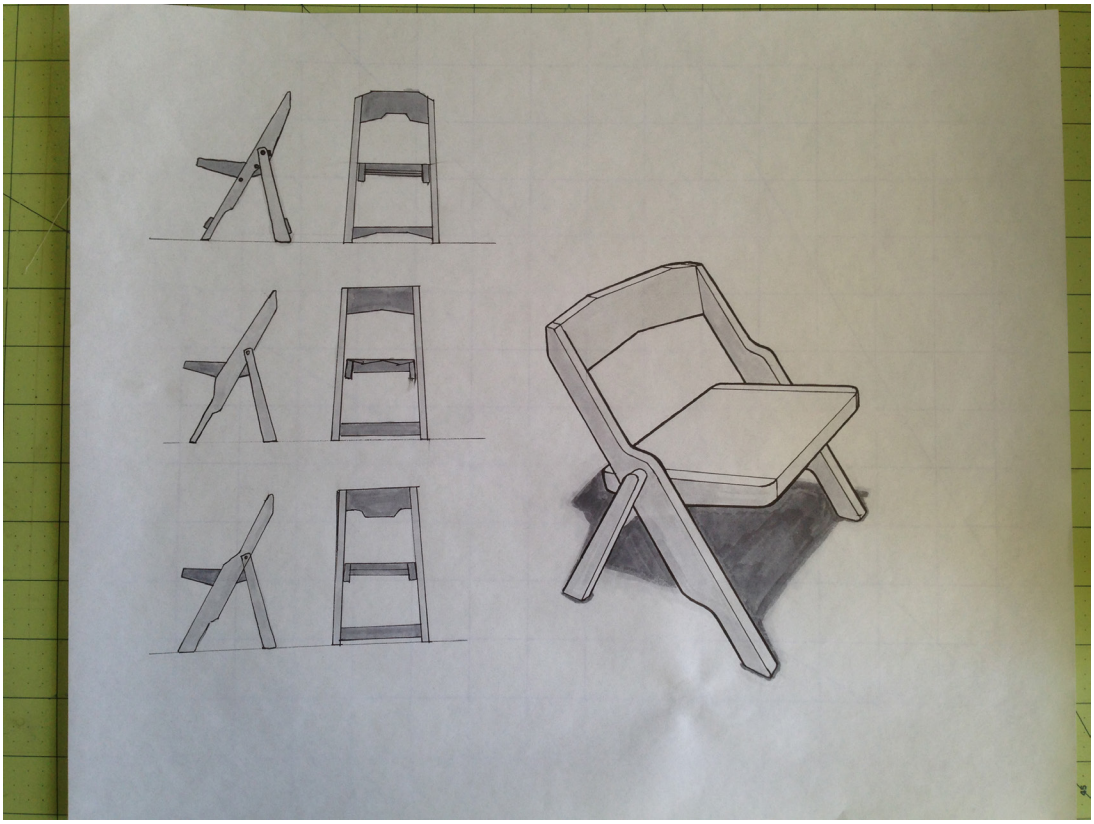




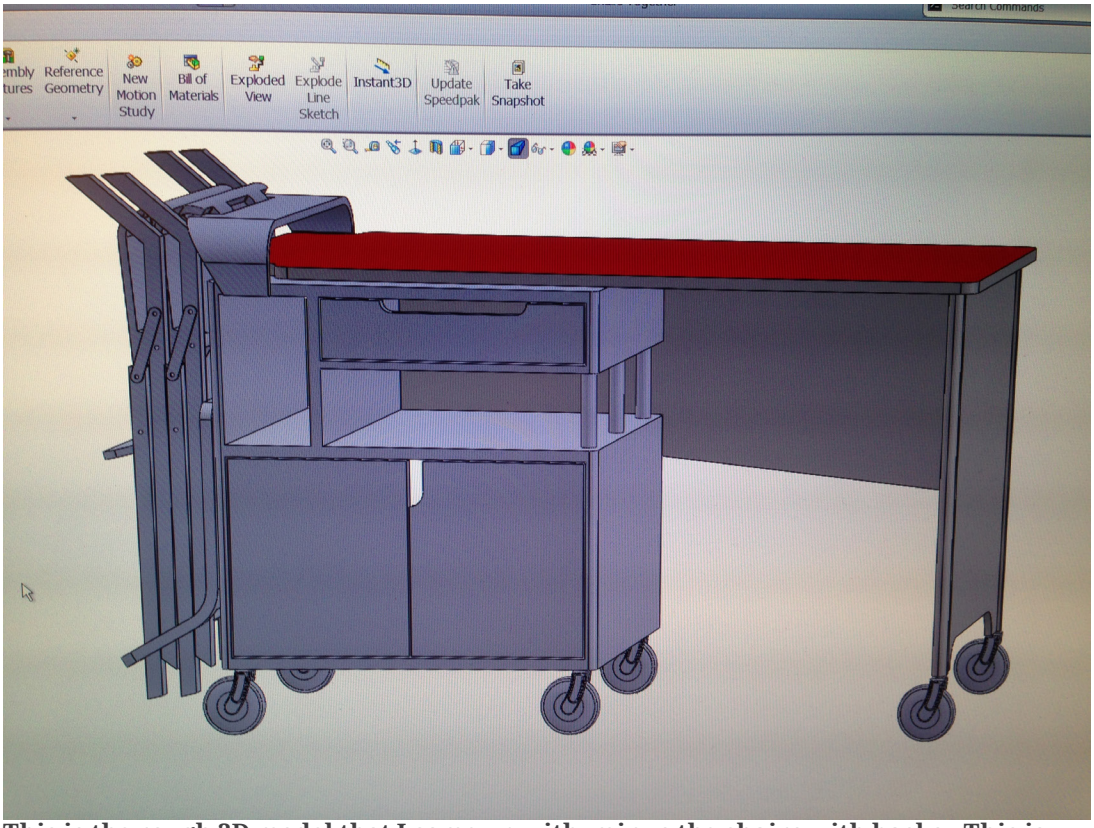


If the chairs were designed to stack together, the cart should be designed to have chairs stacked on it. These sketches show some of my iterations when working through this concept.

One of the resulting concepts modeled in SolidWorks.



For the seating, I decided on a low-back folding chair with the stacking feature. The stool provided nice handles for pushing the cart around, but a low-back chair is nicer to sit in.



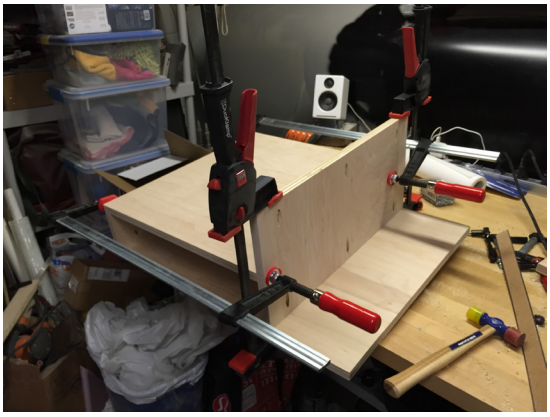
This is the rough 3D model that I came up with–minus the chairs with backs. This is what I used as reference when building my full-scale model, though I did change some details and dimensions while working in the real materials and space.

Full-Scale Model

To build a full-scale model of this design, I used Birch plywood and Maple solid wood. The construction materials are very close or identical to what furniture manufacturers would use for a durable furniture design. I used Maple solid wood to add a finished edge to some of the plywood parts, but a furniture manufacturer would likely use an edge banding veneer to accomplish the same aesthetic.

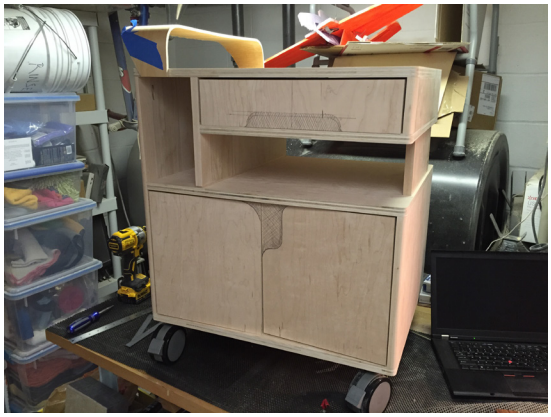
A furniture manufacturer would also opt to include structural joinery like dados and rabbets, but I opted to simplify my joinery to compliment the tools I had available. I used biscuit joints and pocket screws for much of the joinery - it is quick, very effective and can be hidden reasonably.

Construction started with cutting the 1/2” and 3/4” Birch plywood to size and labeling each part.

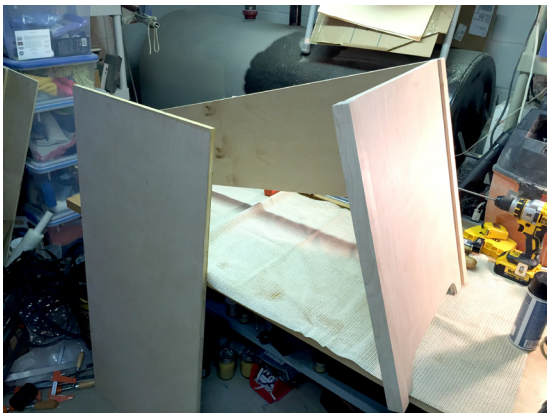


For general construction, I used a combination of biscuit joints and pocket screws. This helped me build the unit quickly and efficiently while creating a strong assembly.

I rounded the edges on the mobile cart case to prevent user injury.



Shaping the table top leading edge.

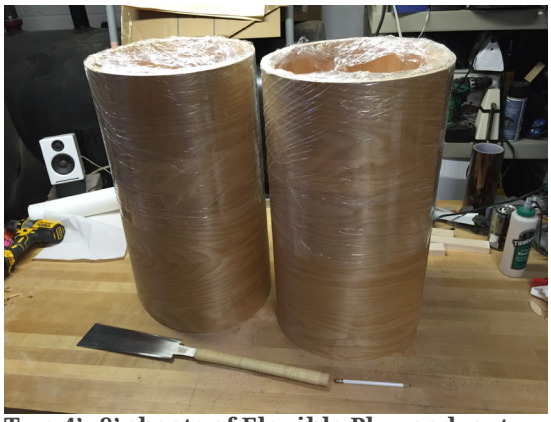


Fitting the table top before shaping the leading edge.

I 3D-printed a router template for shaping the table top and door handle features.

For the curved profiles of the design, I used a technique called bentwood lamination. In this process, thin strips of wood are bent over a mold. A plastic resin glue is applied between each layer. The plastic resin glue forms a hard glue-line, preventing glue-joint creep and ultimately makes the wooden part permanent in shape and exceptionally strong.

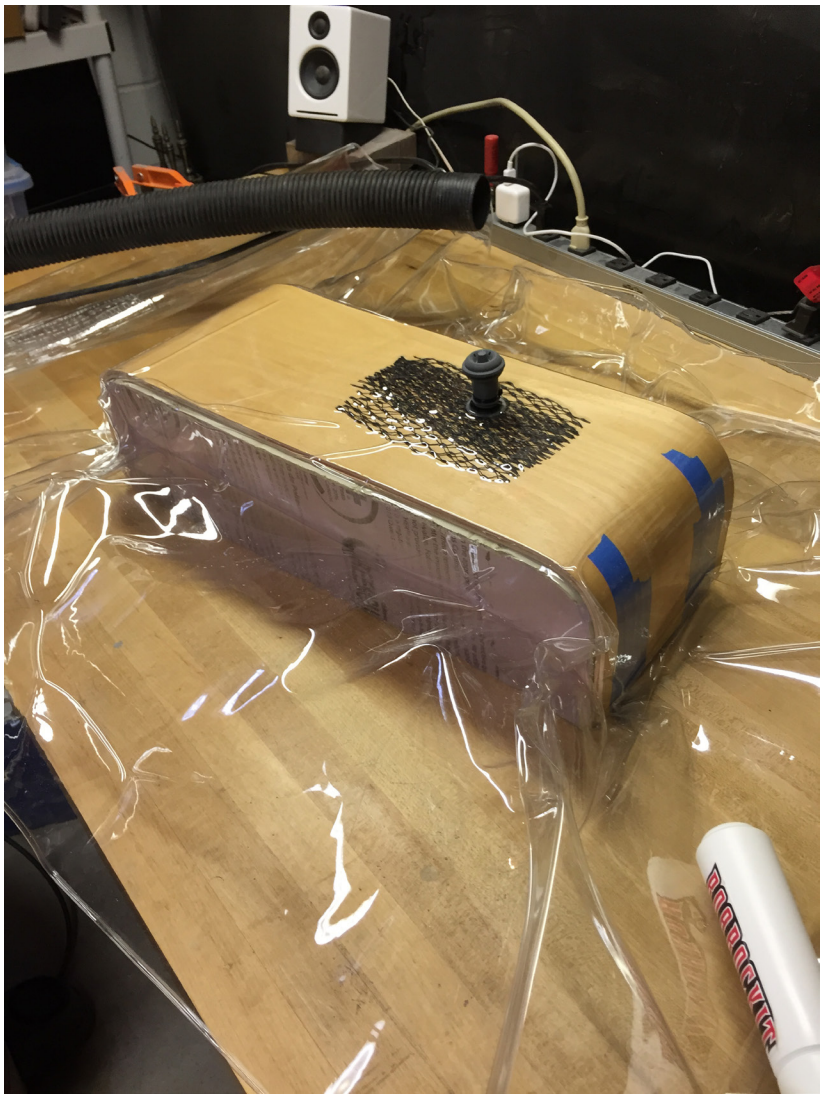
Because of my wide parts, I used a product called Flexible Plywood. It is available in traditional 4x8' sheets, but it is developed to be extremely flexible, capable of a 2" bending radius.

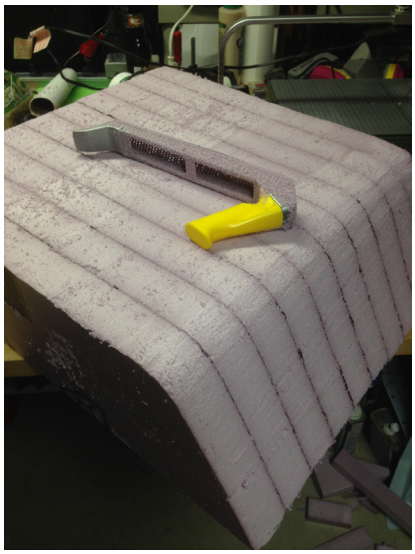


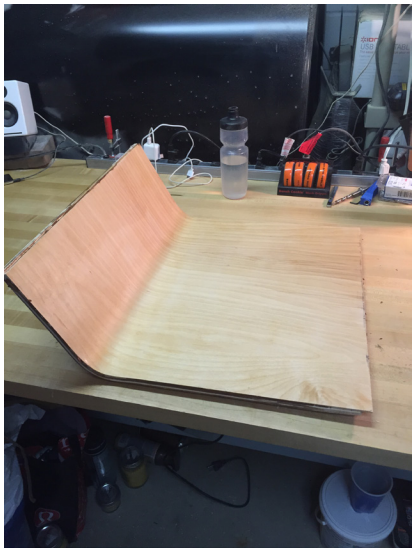
Two 4'x8' sheets of Flexible Plywood, cut into four 2'x8' sheets.

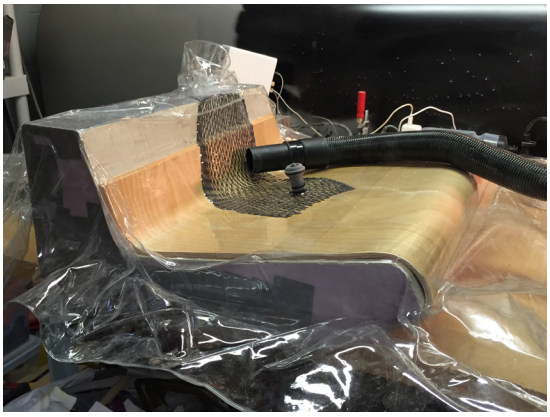
The molds are made from standard home insulation foam cut to shape, glued together for thickness, then refined for the perfect shape. They are then coated with wood filler and sanded smooth for a hard, durable mold surface. Through this project, I learned to cover my mold surface with plastic tape to avoid the glue bonding the wood and the mold together.

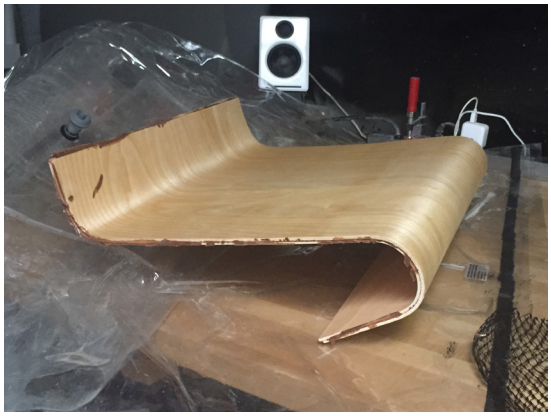
Clamping force was applied with a vinyl vacuum bag. Once all parts are glued and in place inside of the bag, all of the air is removed. The pressure differential between the atmosphere and the inside of the bag creates a firm, even force on the wood against the mold.

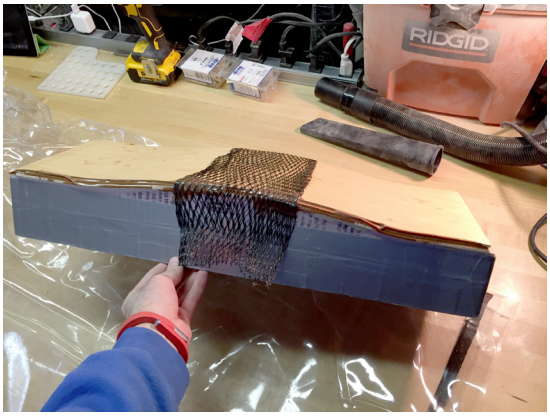










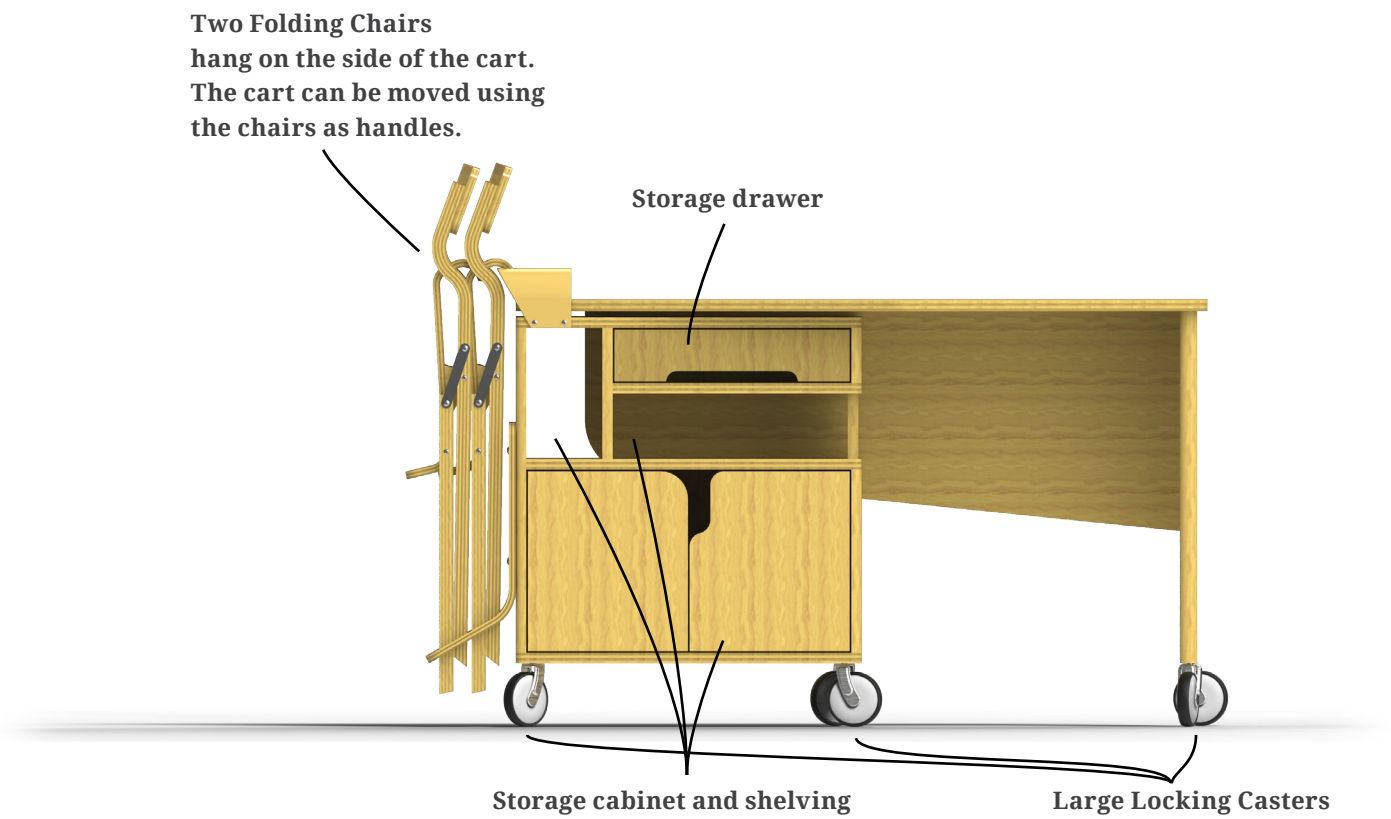


Mocking the chair components together.

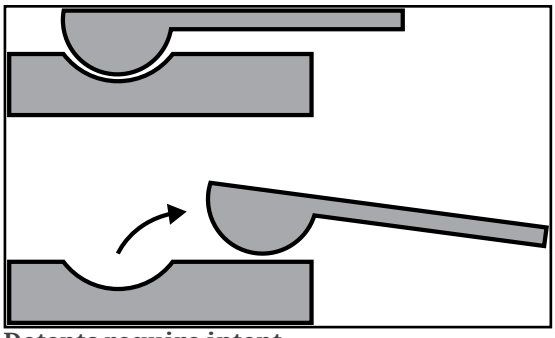
Testing cut-offs from the chair seat-pan for strength.

Final Design

The furniture solution resulting from my research and ideation is this mobile cart and folding chairs.
It has two main modes of operation - Compact and Extended.



In all modes of operation, users have full access to the contents of the storage case, and the large swiveling locking casters allow for ease of movement and ease of immobility. The casters are axle locking and do not rely on friction, so only 2-3 of the 6 casters need to be locked. All vertical edges are radiused to prevent injuries. Locking detents in the eating surface's sliding mechanism prevents the eating surface from shifting over the storage case without deliberate intent.



Detents require intent.

The sliding mechanism for the table top.

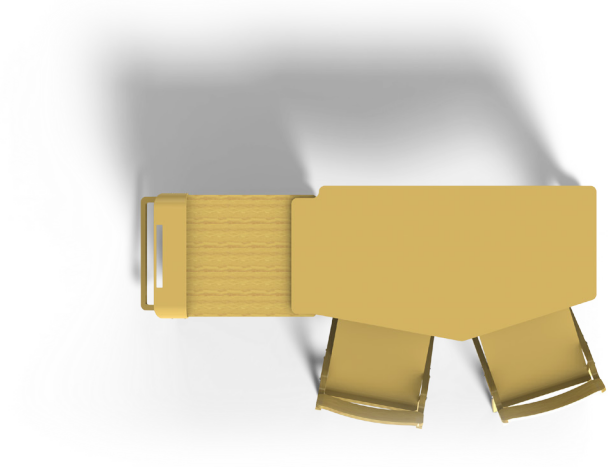
Mobile Cart

Compact Mode:

- Its footprint is small enough to traverse apartment hallways, between apartment unit and communal cooking space.
- The eating surface provides enough space for one user to sit and enjoy a meal.
- The seating attached to the side of the unit behave as handles for moving the unit around the building.
- The seating is folding stacking seating. The chairs stack on top of one another in the folded positions, so one can be removed from the storage case without removing the other.

Extended Mode:

- Its footprint is larger, so this mode is activated when the unit is in place and ready for the casters to be locked.
- The eating surface has enough space for two users to sit and enjoy a meal together.
- The eating surface has an angled leading edge. This provides more elbow room when seating two people and allows users to face each other more easily than a straight leading edge would allow.
- The top of the storage case becomes extra storage surface. During meals, items can be placed there (such as drinks pitchers, condiments and containers for second helpings).



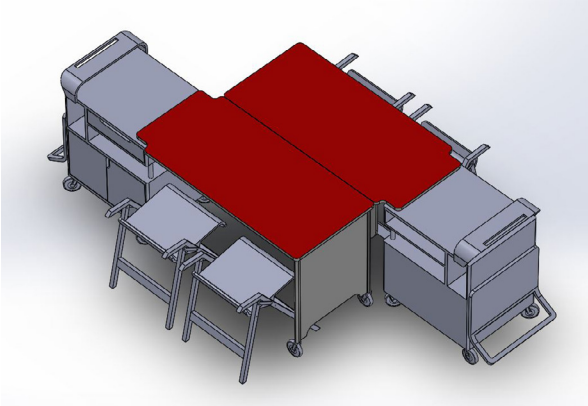
Seating

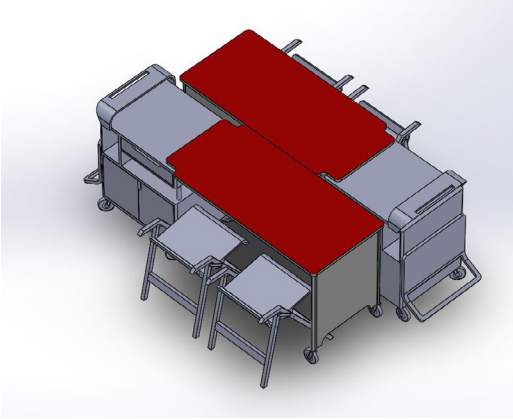
- The seating is designed specifically for the mobile cart.
- The chairs have folding frames to keep the size compact for use in small apartment units.
- The chairs are stackable with each other and the mobile cart, but only in their folded configuration. The first chair hooks into the mobile cart with the tab on the seat pan. The second chair hooks into the first chair's seat pan slot with the its seat pan tab. The legs of the chairs are held in place by a containment ring on the mobile cart.
- The chairs have a low back, for comfort during conversations that may go beyond the meal's end.

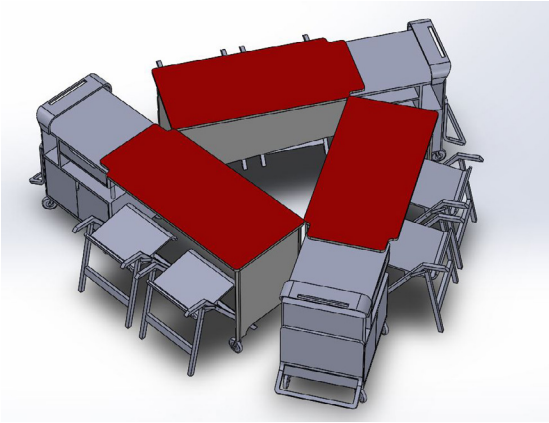
Arrangements

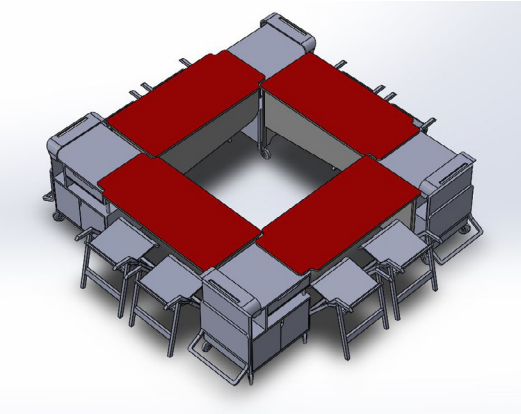
The asymmetrical layout allows for many interesting layouts when combining more than one mobile cart. This allows neighbors to enjoy a meal together, or in a situation where one apartment unit requires more than one mobile cart.

Below are some images of some different arrangements of multiple cart units from my earlier concepts.









User Scenario

It was an early Wednesday at the office. Now it's 2:30 pm and you're home at your apartment building. Some TV and a tea would be great right about now…

In the corner near your front door is your personal cooking space and mobile cart, currently in the compact mode. You open the cart's storage area to get a mug. You fill it with water and toss it in the microwave for a minute. While it's heating up, you grab a tea bag from the shelf in your personal cooking space. It's out, you're steeping your tea, and you grab some milk from the apartment's refrigerator. Fall in couch. TV on. Tea in hand. Relax.

Before you know it, it's 7:00pm! You're feeling hungry, and you need to cook something. You have been in a progressively darkening apartment alone with your TV since midday, and some human interaction would be great. You put your tea mug in the sink to wash later and grab hold of your mobile cart, pushing it out of your apartment unit's threshold and into the hallway towards the communal cooking space. You hope you'll run into a neighbor in there.

While you prepare your meal–some simple chicken and pasta–you leave your mobile cart parked in the corner of the space near where you're cooking. Your cart carries with it spices, dinnerware, silverware, a few small appliances, a cutting board, dry and canned foodstuffs, and some cooking tools. In the communal cooking space, you have access to communal cooking tools like pots and pans, your personal cold and room temperature storage spaces, and some communal large appliances.

You access your cart for the cutting board, seasoning and cooking tools. The other tools and ingredients are found in the communal cooking space and your personal cold and room-temperature storage. Cut, season, bake. Your neighbor Mary comes in to cook. Boil pasta, fill your plate. Your neighbor Bill comes in with his new girlfriend to reheat some of last night's takeout.

As you pull out your chair and sit down to eat your meal at your mobile cart, Mary finishes up her cooking and pushes her cart next to yours. You two enjoy a short meal and some simple conversation as Bill and his girlfriend sit down on the other side of the room at his extended cart to eat their leftovers. Mary is jealous of your short workday, and she tells you about a card game she's organizing for Friday night. You're invited! She says she'll invite Bill too, but she doesn't want to bother him - things look like they're going well for them. You overhear Bill's girlfriend's name and make note of it - you're pretty sure you'll be seeing Alyssa around the building more often.

The meal is done, and it's time to clean up! You don't want to leave a mess (you had done that once and never heard the end of it), so you clean your pot and baking dish, your dinnerware and silverware, and gather your belongings back into your cart. You push it back into your apartment unit and enjoy the rest of your evening in solitude.

The communal cooking space and mobile carts are essential to the social operations of the building. They allow you to socialize with your neighbors where you would otherwise be alone, and they let you keep an eye on the goings-on within the apartment building. You share in the lives of others, and they share in yours.

Discussion and Conclusion

From here, I believe the mobile cart furniture solution accomplishes the goal of allowing these two cooking spaces to work - ultimately allowing a communal cooking space to function in an American apartment building. Even without a communal cooking space, this product may allow neighbors who already know each other to more easily gather for meals and group activities not limited to food. The eating surface can be used for playing board games and card games, for instance.

Currently the seating arrangement for the cart is side-by-side for the space layout and interesting combinations of multiple units. Future iterations might make use of seating on two opposite sides, three adjacent sides or all four sides of the eating surface. Future iterations might not have any defined sides at all. Any changes to the seating configuration would require changes to how items are stored and the overall construction of the unit.

The seating furniture I designed is a low-back folding chair. Some further experimentation will be needed to see if stools, benches, or another kind of seating solution would work best for creating an intimate eating setting. Long-term user testing would be beneficial for this too, to see how long users will sit in the chairs and how they sit during and after their meals.

Ultimately, the success of this unit requires a living space where there are multiple cooking spaces, or, perhaps one common cooking space and a desire for residents to take ownership of their dining furniture (users would know what that curious stain on the table surface is from). I would be interested to partner with an apartment

building or artist residency to manufacture several units and perform long-term testing, gathering insight into the use the units get and how satisfied users are with them.

If this product and living space concept were picked up and produced in meaningful numbers, I would redesign for different materials and processes. The plywood construction worked well for my mockups, but the labor in construction would be very expensive for quantity items. For new manufacturing directions, I would research redesigning for plastic rotomolding, sheet metal construction, fiberglass layups and polypropylene molding.

Outside Support

My proposed way of living in an apartment building with a shared cooking space would be a drastic change for most users in the United States. It is not, however, an unfounded idea. There is a history of communal cooking and eating around the world, like the "phiditia" (communal meals) of Sparta.[15] Communal cooking and eating traditions still continue today.

Fig. 9

This student dormitory, Tietgenkollegiet, in Denmark focuses on creating discreet communal living units, where 12 rooms are shared between one common cooking and eating space.[16]

In much of West Africa, villages are highly communal. Groups of people will share meals together, and the meals are typically served from one communal bowl and often without utensils.[17,18]

I hope that living spaces such as the one I designed can exist in the United States in the future, so that apartment dwellers can share both the good and bad to enrich their lives through community involvement.

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15 **Cook's Info. "Food in Ancient Greece"**
16 **Tietgenkollegiet "The Kitchen - A Little Family"**
17 **Motlagh, Jason. "Traveling Responsibly in West Africa"**
18 **Lininger, Mike. "South Africa - Dining Etiquette"**

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